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ABSTRACT

This publication offers information that may be of assistance in the development of programs or activities in aviation education. This report includes a listing of: the number of schools in each state cffering high school aviation courses, state aerospace education advisory committees, high school teacher associations, full-time state personnel assigned to Air Age Education, and federally cr privately funded programs testing innovative approaches in air education. A report on teacher certification requirements in the various states for a course of one-half to one year in aviation education is also included. (BR)

STATUS REPORT

Air Age Education Division
CESSNA AIRCRAFT COMPANY

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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ED037346

January, 1970

Last year we sent you a Status Report on air age education in our nation's schools. Among the information were listings of: (1) the number of high school aviation courses (orientation type, offered for credit) by state; (2) addresses of state advisory committees on aerospace education; (3) full-time staff personnel assigned air age education duties; (4) aviation teacher associations; and (5) teacher certification for aviation education.

Now that the 1969-1970 school year is underway and most of the secondary schools offering (for credit) a general course in aviation have been identified, we would like again to share with you this recent information, hoping it will be useful to you.

Also, we want again to offer you the assistance of our staff of specialists in aviation education, should your planning include development of programs or activities in the area of air age education. We want to help you to help youth better understand the role of aviation in today's world and become cognizant of job and career opportunities in the broad field of aviation.

SE 008 013

AIR AGE EDUCATION DIVISION
CESSNA AIRCRAFT COMPANY
January 1, 1970

HIGH SCHOOL AVIATION EDUCATION COURSES

IDENTIFIED THRU 1/1/70

ALABAMA.....0
ALASKA.....7
ARIZONA.....8
ARKANSAS.....2
CALIFORNIA.....80
COLORADO.....15
CONNECTICUT.....1
DELAWARE.....2
FLORIDA.....12
GEORGIA.....6
HAWAII.....1
IDAHO.....2
ILLINOIS.....22
INDIANA.....13
IOWA.....6
KANSAS.....34
KENTUCKY.....4
LOUISIANA.....2
MAINE.....1
MARYLAND.....1
MASSACHUSETTS.....4
MICHIGAN.....16
MINNESOTA.....17
MISSISSIPPI.....1
MISSOURI.....2
MONTANA.....10
NEBRASKA.....15
NEVADA.....1
NEW HAMPSHIRE.....0
NEW JERSEY.....6
NEW MEXICO.....4
NEW YORK.....12
NORTH CAROLINA.....10
NORTH DAKOTA.....5
OHIO.....19
OKLAHOMA.....15
OREGON.....12
PENNSYLVANIA.....22
RHODE ISLAND.....0
SOUTH CAROLINA.....1
SOUTH DAKOTA.....1
TENNESSEE.....5
TEXAS.....17
UTAH.....8
VERMONT.....1
VIRGINIA.....6
WASHINGTON.....14
WEST VIRGINIA.....0
WISCONSIN.....12
WYOMING.....6

STATUS REPORT

STATE AEROSPACE EDUCATION
ADVISORY COMMITTEES

January, 1970

Alabama - Alabama State Aerospace Education Committee
Mr. J. D. Couch, Chairman
Science Consultant
State Department of Education
Ayers Hall
Jacksonville State University
Jacksonville, Alabama 36265

Alaska - Alaska Aerospace Education Advisory Committee
Mr. Stowell Johnstone, Chairman
Anchorage Borough School District
Anchorage, Alaska 99503

California - California Aviation Education Advisory Committee
Mr. W. Earl Sams
California Department of Education
721 Capitol Mall
Sacramento, California 95814

Hawaii - Hawaii Aerospace Education Association
Lt. Colonel Ronald H. Markarian, USAF
101 Koa Lane
Hickam AFB, Hawaii 96553

Illinois - Illinois Aerospace Education Council
Dr. W. W. Fishback, Chairman
Professor of Graduate Education
Southern Illinois University
Carbondale, Illinois 62901

Indiana - Indiana Aerospace Education Council
Mr. Warren Helm, Chairman
Consultant, Aerospace Education
609 W. Washington St., Room 605
Indianapolis, Indiana 46204

Iowa - Iowa Aerospace Education Council
Mr. Wes Sharp
Air Age Education Officer
Iowa Aeronautics Commission
State House
Des Moines, Iowa 50319

Georgia - Georgia Aerospace Education Committee
Mr. H. V. Bullock, Chairman
Assistant Director
Division of Curriculum Development
State Department of Education
Atlanta, Georgia 30334

Kansas - Kansas Commission on Aerospace Education
Mr. Gerald Christensen, Secretary
State Department of Public Instruction
120 East 10th Street
Topeka, Kansas 66612

Minnesota - Minnesota Aerospace Education Council
Mr. Don Clauson
Minnesota State Department of Education
Director of Curriculum Development
Centennial Office Building
St. Paul, Minnesota 55101

New Jersey - New Jersey Aerospace Education Advisory Council
Dr. Harold T. Shafer, Chairman
Wyckoff Township Public Schools
Wyckoff, New Jersey 07481

New York - New York State Aerospace Education Council
Mr. Alvin E. Rubin, Vice Chairman
Associate in Secondary Curriculum Development
New York State Department of Education
Room 314G
Albany, New York 12224

" " - New York City Aerospace Education Committee
Dr. Daniel A. Salmon, Assistant Director
Bureau of Curriculum Development
131 Livingston Street
Brooklyn, New York 11201

Oklahoma - Air Age Education Committee for Oklahoma
Mr. Keith W. Lutz
Director of Aeronautics
Oklahoma Aeronautics Commission
510 Sequoyah Building
Oklahoma City, Oklahoma 73105

Oregon - Oregon Aerospace Education Council
Mr. Patrick Reilly, Coordinator Dist.#4
Division of Continuing Education
3505 Northeast Granger Road
Corvallis, Oregon 97330

Pennsylvania - Aviation Education Advisory Committee
Mr. William Bolles, Chairman
Science Education Adviser
Bureau of General and Academic Education
Department of Public Instruction
Box 911
Harrisburg, Pennsylvania 17126

STATE AEROSPACE EDUCATION . . . cont'd

Texas - Texas Aerospace Education Council
Mr. Arthur I. Martin, Chairman
Director of Aerospace Education
AF-CAP-RLO
U. S. Naval Air Station
Dallas, Texas 75211

Washington - Washington State Aerospace Advisory Committee
Mr. James Garner, Chairman
Science Education Department
State Department of Public Instruction
Olympia, Washington 98501

Wisconsin - Wisconsin Aerospace Education Committee
Mr. Carl E. Guell, Secretary
Hill Farms State Office Building
4802 Sheboygan Avenue
Madison, Wisconsin 53702

STATUS REPORT

HIGH SCHOOL TEACHER ASSOCIATIONS

January, 1970

California - California Aerospace Education Association
Ms. June Edwards (President)
3100 Durrwood Street
Bakersfield, California 93304

Indiana - Educators Aerospace Education Association
Mr. Lloyd Frozer (President)
2710 Highway 62
Jeffersonville, Indiana 47130

Kansas - Kansas Association Aviation Teachers
Mr. Verne Hendrixson (President)
Buhler High School
Buhler, Kansas 67522

Nebraska - Nebraska Aerospace Educators Association
Mr. William Averman (President)
Millard High School
12801 L Street
Millard, Nebraska 68137

Ohio - Ohio Education Association: Flying Teachers Association
Mrs. Marge Compton (President)
Columbus Technical Institute
557 Mount Vernon St.
Columbus, Ohio 43215

Washington - Washington Aerospace Association
Mr. William F. Shelley (President)
Intermediate School District No. 110
King County Court House Unite No. 2
Seattle, Washington 98109

STATUS REPORT

FULL TIME STATE PERSONNEL
ASSIGNED TO AAE

January, 1970

California - Mr. W. Earl Sams
Consultant in Secondary Education
Bureau of Elementary and Secondary Education
California Department of Education
721 Capitol Mall
Sacramento, California 95814

Illinois - Mr. Raymond J. Johnson
Executive Officer, CAP Division
Illinois State Department of Aeronautics
33 W. Jackson Boulevard, Room 500
Chicago, Illinois 60604

Indiana - Mr. Warren Helm, Consultant
Aerospace Education, Room 605
Department of Public Instruction
609 W. Washington St.
Indianapolis, Indiana 46204

Iowa - Mr. Wes Sharp
Air Age Education Officer
Iowa Aeronautics Commission
State House
Des Moines, Iowa 50319

Minnesota - Mr. Kenneth Patz
Aviation Representative
Minnesota Department of Aeronautics
Administration Building
St. Paul Downtown Airport
St. Paul, Minnesota 55107

Montana - Mr. T. Duane Jackson
Supervisor of Aviation Education
Department of Public Instruction
Helena, Montana 59601

Pennsylvania - Mr. William J. Smith, Adviser
Division of Highway and Aviation Education
Bureau of General and Academic Education
Department of Public Instruction
Box 911
Harrisburg, Pennsylvania 17126

Washington - Mr. Robert R. Gesell
Consultant, Aerospace Education
Washington State Aeronautics Commission
8600 Perimeter Road
Boeing Field
Seattle, Washington 98108

(OVER)

FULL TIME STATE PERSONNEL . . . cont'd

Wisconsin - Mr. Carl E. Guell, Chief
Aviation Education and Safety
Division of Aeronautics
4802 Sheboygan Avenue
Madison, Wisconsin 53702

January, 1970

IN ADDITION . . . we are enclosing several other items of information which might provide ideas and assistance in the advancement of air age education. They include: listings of key high school programs and references; description of proposed elective credit courses in Texas; state proclamation in California; presentation to Kansas State Board of Education; proposal for a full-time consultant in New Jersey which was adopted; and a list of high schools which offer an aviation course for credit.

Air Age Education Division
Cessna Aircraft Company

* * * * *

FEDERAL OR PRIVATELY FUNDED PROGRAMS TESTING INNOVATIVE APPROACHES

M.S.D. of Wayne Township
Mr. Thomas G. Garrison
Director of Career Development
1220 S. High School Road
Indianapolis, Indiana 46241

Campus High School
Mr. Howard Barron
Head-Aeronautics Department
2100 W. 55th St., South
Wichita, Kansas 67217
(Aeronautics Industries Project)

Dupo High School
Mr. William Reynolds
600 Louisa Avenue
Dupo, Illinois 62239
(Vocational Aerospace Education)

John Jay High School
Mr. A. W. Miller
237 Seventh Avenue
Brooklyn, New York 11215

Puget Sound Area Schools
Mr. Roy R. Duncan
Director of Aerospace Education
200 2nd Avenue, North
Seattle, Washington 98109
(Joint School District Project)

Kings Park Senior High School
Mr. Daniel Brush
Aerospace Project Administrator
Kings Park, New York 11754

Lincoln Public Schools
Administration Building
Box 200
Lincoln, Nebraska 68501
(Aerospace Curriculum Development Project-secondary school classes)

Onalaska Senior High School
Mr. Stanley Helms
Superintendent
700 Wilson Street
Onalaska, Wisconsin 54650
(Project in Elementary Aviation Utilizing Community Resources)

Richmond Unified School District
Mr. Robert Mullen
Coordinator of Special Projects
1108 Bissell Avenue
Richmond, California 94802
(Learning Through Aviation)

Seminole City Schools
Mr. H. B. Mitchell
Superintendent
P. O. Box 1031
Seminole, Oklahoma 74868
(Social Studies and Science Careers Oriented Program and Materials Center)

Shore Regional High School
Mr. Raymond B. Carter
Highway No. 36
West Long Branch, New Jersey 00764
(Four-School Cooperative Program Involving Flight Simulator)

SUGGESTED SUCCESSFUL HIGH SCHOOL CONTACTS

Clintonville Senior High School
Mr. R. E. McMahon
Course Guide for Aerospace Science
Clintonville, Wisconsin 54929

Hinkley High School
Mr. Noel E. Bullock
Aerospace Education (Social Studies)
1250 Chambers Road
Aurora, Colorado 80011

Lawrence High School
Mr. David Whypp
Aeronautics
2525 Princeton Pike
Trenton, New Jersey 08638

Noblesville High School
Mr. Don E. Roberts
Aerospace: Science of Pre-Flight Aeronautics
300 North Seventeenth
Noblesville, Indiana 46060

Nova High School
Mr. Earl Flint
Aero Technology
3600 S.W. College Avenue
Ft. Lauderdale, Florida 33314

Redondo Union High School
Mr. Ted G. Misenheimer
Aeroscience
631 Vincent Park
Redondo Beach, California 90277

GENERAL REFERENCES

An Introductory Course Guide, Up, Up, and Away (exploratory study of students in secondary aviation courses), Teaching Ideas for Aviation Education

Cessna Aircraft Company
Air Age Education Division
P. O. Box 1521
Wichita, Kansas 67201

Introduction to Aerospace Education, Volume 15

Times Mirror School & Library Service, Inc.
6633 West Howard Street
Niles, Illinois 60648

Aviation Education Bibliography

National Aerospace Education Council
310 Shoreham Building
806 15th Street, N.W.
Washington, D.C. 20005

Aviation Education Programs-1969, Order Form, Aviation Education Services and Resources

Office of General Aviation Affairs
Federal Aviation Administration
Department of Transportation
Washington, D.C. 20590

Suggested Teacher's Guide for Air Age Program

Aviation Development Council
Room 324, Hangar No. 2
LaGuardia Airport
Flushing, New York 11371

STATE PUBLICATIONS

Aerospace Science Education, 1965 (A Curriculum Guide)
State Department of Education
Juneau, Alaska 99801

A Status Report of Aviation and Aerospace Education in California
Bureau of Elementary and Secondary Education
Department of Education
721 Capitol Mall (loan copies available)
Sacramento, California 95814

Aerospace Education, 1968
Division of Instruction
Curriculum Section
Department of Public Instruction
Bismarck, North Dakota 58501

The Feasibility of Oregon Community Colleges and Secondary Schools Offering Civil Aviation Occupational Education, 1968
Oregon State Department of Education
Division of Community Colleges and
Vocation Education
Salem, Oregon 97310

AVIATION TEXTS

Aerospace Education Text Booklets
Civil Air Patrol
Bookstore
Maxwell AFB, Alabama 36112

An Introduction to General Aeronautics, 1965
C. N. Van Deventer
American Technical Society
848 E. 58th Street
Chicago, Illinois 60637

Applied Aviation Science, 1967
Fred G. Mercer
A-V Company
6795 E. Exposition
Denver, Colorado 80222

Aviation & Space In The Modern World, Rev. 1968
James V. Bernardo
E. P. Dutton & Co., Inc.
201 Park Avenue, South
New York, New York 10003

Fundamentals of Aviation & Space Technology, 1968
Leslie A. Bryan
Institute of Aviation
University of I.-Willard Airport
University of Illinois
Savoy, Illinois 61874

Stick and Rudder, 1944
Langewiesche
McGraw-Hill Book Company
330 West 42nd Street
New York, New York 10036

SOURCES OF GROUND SCHOOL MATERIAL

A-V Company
7695 E. Exposition
Denver, Colorado 80222

Aero Products Research, Inc.
18111 Teale Street
Culver City, California 90230

Aviation Book Company
P. O. Box 4187
565-1/2 W. Glenoaks Blvd.
Glendale, California 91202

Extension Division
University of Nebraska
Lincoln, Nebraska 68508
(correspondence study: Aeronautics IX-A Course in Aviation)

Iowa State University Press
108A Press Building
Ames, Iowa 50010

Jeppesen & Co.
8025 E. 40th Avenue
Denver, Colorado 80207

Pan American Navigation Service, Inc.
12021 Ventura Boulevard
N. Hollywood, California 91604

Sanderson Films Inc.
P. O. Box 13121
Wichita, Kansas 67213

Supt. of Documents
U. S. GPO
Division of Public Documents
Washington, D.C. 20402

STATUS REPORT

TEACHER CERTIFICATION FOR AVIATION EDUCATION

January, 1970

A report on teacher certification requirements in the various states for a course of one-half to one year in aviation education.

Rationale:

States vary widely in provisions for certifying, or licensing, teachers for specific high school courses. It was felt that one benefit would be knowledge of what individual states have done with respect to establishing criteria of approving teachers of high school aviation courses.

As expected, a wide range of criteria exists, all the way from very restrictive to moderately permissive. In some cases, such as the District of Columbia and state of Oklahoma, schools wishing to offer an approved course in aviation might have difficulty in obtaining accreditation for the course simply because the number of teachers meeting the requirements would be so few.

It is noted that most states assume that schools starting such a course would place it in the physical science discipline, although courses are successfully presented in other disciplines. Those states that make specific provision for aviation course teachers, other than those in the vocational and industrial arts areas, are noted with an asterisk.

A model of what is reasonable and proper would be those in Kansas, Colorado, Oregon, and New Mexico. Though each of these states have taken a slightly different approach to the matter, their respective statements include provisions which are not unreasonable; that is, few schools would meet obstacles of such magnitude as to preclude their ability to offer the course on an approved basis.

When state superintendents or commissioners of education were contacted for this information, they were also asked to name someone on their staff who would serve as contact persons to work with groups or committees interested in promoting aviation education. These persons' names and titles are included in the following listing.

Method:

Letters to all 50 states and the District of Columbia provided the original information in 1968. A follow-up survey was completed in December, 1969, to update the information and addresses of contacts.

States are listed individually, and the specific information is given in brief, summary form.

Alabama

Alabama has no specific requirements regarding teacher certification in the subject field of aviation education. Contact: Mr. W. A. Huestess, Science Consultant, Department of Education, Montgomery, Alabama, 36104, is interested in promoting all aspects of applied science, including aviation education.

Alaska

Alaska does not certify teachers in any specific subject area. Alaska Aerospace Education Committee develops education guidelines. Dr. W. Russell Jones, Director - Instructional Services, and Mr. Paul Hilburn, Secondary Consultant - Instructional Services, Department of Education, Div. of Administrative Services, Pouch F, Juneau, Alaska 99801. Contact: Mr. Kenneth C. Grieser, Coordinator-Federal Programs. (same address)

Arizona

Arizona has no present certification of any kind for aviation education, flying instruction, or other similar areas. Mr. John A. Freestone, Director, and Mr. George E. Booth, Jr., Assistant Director, Division of Certification, Department of Public Instruction, Phoenix, Arizona, 85001. Coordinator in aviation education for the State Department is Mr. Harvey Stern, Director Elementary Education, Department of Public Instruction, Suite 165, Capitol Building, Phoenix, Arizona, 85007.

Arkansas

Arkansas does not certify teachers at the present time in the field of aviation education. Those courses offered in high schools are taught by teachers certified in other fields, such as science or social studies.

Arkansas Education Department personnel have met from time to time with a state committee interested in aerospace instruction. So far as is known, no teacher-training college in Arkansas offers a general survey course covering aviation's impact on society.

Contact: Mr. Curtis Swaim, Association Commissioner for Instructional Services, and Mr. Rayburn Richardson, Supervisor of Instruction, State Education Department, State of Arkansas, Little Rock, Arkansas, 72201.

* California

"The Department of Education shall aid and assist local school districts in the development and conduct of a program of aviation education." California State Department of Education, Education Codes Section, Chapter 4, Article 5, Aviation Education.

Most of the high school aviation instructors are holders of the general secondary teaching credential in science, English, mathematics or some other such area. A standard designated subject teaching credential in aviation flight instruction and/or in aviation ground instruction shall be granted to an applicant who submits a complete application and has obtained a valid flight and/or ground instructor's certificate issued by the Federal Aviation Administration with the appropriate rating for each subject to be listed on the credential according to California Education Code and Administrative Code, Title 5.

Contact: Mr. W. Earl Sams, Consultant in Secondary Education, Bureau of Elementary and Secondary Education, California Department of Education, 721 Capitol Mall, Sacramento, California, 95814.

* Colorado

Colorado will endorse a certificate only in the "major" field. Teachers for air age education classes are drawn from certificated personnel who have gone through available courses, workshops, seminars; or those who hold valid pilots, ground school, or other aviation licenses.

In some instances, specialists from other disciplines, career men, selected fixed base operators, or pilots are brought in to teach some portions of the classes. Colorado has a type of provisional permit in Type I, Letter of Authorization, Recognized Expert, which would permit employment of such a person. Mr. Otto G. Ruff, Director Teacher Education and Certification, Colorado Department of Education, State Office Building, Denver, Colorado, 80203.

Contact: Dr. W. Henry Cone, Asst. Commissioner for Instructional Services. (same address)

Connecticut

There is no certificate requirement for aviation education, since the courses are offered by teachers of social studies, general science, earth science, or physics. Wherever such a course is offered the teacher would be expected to have a broad background in such studies as are implied by these endorsements on his secondary school certificate. Mr. Willis H. Umberger, Chief, Bureau of Federal-State-Local Relations, Department of Education, Hartford, Connecticut, 06115.

Delaware

Delaware has no specific certification requirements in this area. Courses would be taught by teachers of science, math or social studies, depending on the particular aspect of the course involved. Dr. Howard E. Row, Assistant Superintendent, Auxiliary Services, and Dr. Elizabeth L. Lloyd, Director, Teacher Education and Professional Standards, Department of Public Instruction, Dover, Delaware, 19901.

District of Columbia

"The requirements are as follows:

1. A Master's Degree from an accredited college; and

2. Certification of having qualified for and held a private pilot's license, or a military pilot's rating, or an official ground instructor's rating for teaching civil air regulations, navigation meteorology, aircraft, and air-craft engines; recognition to be taken of any revocation or suspension of pilot's license by a qualified authority; and

3. The equivalent of not less than eighteen semester credits in courses in education or professional courses successfully pursued as part of or in addition to the work for the degree and representing a definite program of preparation for teaching in secondary schools. Within these eighteen semester credits, courses must be offered in the following fields:

- Educational psychology
- Principles and methods of senior high or secondary school education
- Observation and practice teaching in secondary schools
- Materials and methods of teaching the major or an allied subject in secondary schools.

Not less than two of the following courses:

- Principles and methods of junior high school education
- Curriculum construction
- Vocational guidance
- Tests and measurements

Provided, that two years of successful teaching experience under adequate supervision in the elementary or secondary schools of a well-organized and accredited school system may be offered in lieu of the observation and practice teaching; and provided, further, that practical experience in the major, satisfactory to the Board of Examiners, may be offered in lieu of the observation and practice teaching; and provided, further, that the eighteen semester credits specified in courses in education or professional courses may have been completed in total or in part prior to the probationary appointment of the candidate but must be completed by the end of his probationary appointment."

Mr. Henderson J. Williams, Assistant Chief Examiner, District of Columbia Public Schools, Board of Examiners, 415 12th Street, N.W., Washington, D. C., 20004.

* Florida

A teacher to be eligible to teach a 1/2 to 1 year course in aviation must be certified in the field of science at the secondary level. Principals require teachers to have aviation experience as well. Contact: Mr. Jack M. Hopper, Science Consultant, Department of Education, Tallahassee, Florida, 32304.

Georgia

The State of Georgia does not have teacher education programs or certification in the subject field of aviation. Contact: Dr. Claude M. Ivie, Director, Division of Curriculum Development, Georgia Department of Education, Room 208, Education Annex Building, Atlanta, Georgia, 30334.

Hawaii

Hawaii has no teacher certification requirements in the subject field of aviation education. Contact: Mr. Eugene H. Yamamoto, Administrator-Employment, State of Hawaii, Department of Education, Office of Personnel Services, P. O. Box 2360, Honolulu, Hawaii, 96804.

Idaho

Idaho has no qualifications adopted for the teaching field of aviation education for secondary teachers. Contact: Mr. Francis H. Rist, Program Administrator-Secondary Education, Department of Education, Statehouse, Boise, Idaho, 83707.

Illinois

"Thirty-two semester hours in the field, including study in all nine of the areas listed below, or 24 semester hours in the field including study in at least five of the following areas, one of which shall be flight orientation:

1. History of Aviation
2. Aerodynamics
3. Aerospace Powerplants
4. Airframes
5. Federal Air Regulations
6. Aerospace Navigation
7. Meteorology
8. Flight Orientation (20 hours solo and/or dual flight)
9. Aerospace Control, Communication, and Guidance Systems"

Contact: Dr. Earl Morris, Director, Department of Curriculum Development, 316 South Second Street, Springfield, Illinois, 62706.

Indiana

"At this time the State of Indiana does not have a pattern for the preparation of teachers in the field of aviation education." Contact: Mr. Bill L. Williams, Director of Teacher Education Certification, State Department of Public Instruction, Room 230 Statehouse, Indianapolis, Indiana, 46204.

The State Department of Public Instruction issues a Certification Bulletin #363 entitled "Aerospace Science Education (A Curriculum Guide)" which generally supports the place of aerospace education in the secondary school curriculum.

Iowa

"Air education programs offered at the secondary level (high school and community college) which involved public school teachers would need to be certified and approved to teach in the subject matter field of aviation education." Mr. Howard R. Hammond, Consultant, Teacher Education-Vocational, Department of Public Instruction, Des Moines, Iowa, 50309. Contact: Dr. Donald Wallace, Director of Institutional Research, Room 212 Old Main, Drake University, Des Moines, Iowa, 50311.

Kansas

A requirement becoming effective January 1, 1968:
"Eighteen semester hours distributed as follows: Aerospace Education (principles of flight, history of flight, navigation, meteorology, etc.) 6 semester hours. Elective courses: 12 semester hours selected from such courses as visual education, sociology, economics, psychology, business education, industrial arts, mathematics, science.

Aerospace education may be included in qualifying for a high school diploma in one of the following fields: Social science, industrial arts, business, mathematics, and science provided the subject matter is so designed that it is appropriate to the classification in which credit is awarded and the teacher qualified to teach this subject in that field." Contact: Mr. C. C. Rice, Director of Curriculum, State Department of Education, 120 E. 10th, Topeka, Kansas, 66612.

Kentucky

Kentucky has no major or minor in the field of aviation. Though Mr. William C. Sanders, Jr., Assistant Director Division of Teacher Education and Certification was sure such courses are offered in Kentucky, he is unsure how accreditation is being handled. Contact: Mr. Wendell Cave, Science Consultant, Kentucky Department of Education, Frankfort, Kentucky, 40601.

Louisiana

Louisiana does not add teacher certification for the field of aviation. Science certification is the closest to certification as a teacher of aviation. Contacts: Mr. James DeLee, Director Teacher Education, Certification and Placement, and Mr. H. G. Shannon, Director Veteran's Education and Training, Louisiana Department of Education, Baton Rouge, Louisiana, 70804.

Maine

There is no provision at this time. There are no known courses being taught in Maine. Mr. Horace O. McGowan, Supervisor of Secondary Education Department of Education, Augusta, Maine, 04330. Contact: Mr. Robert Hasenfus, Director of Driver Education. (Same address)

Maryland

Maryland does not have requirements in the area of aviation education; however, such topics are taught by teachers in the science and math departments. Mr. John C. Metzger, Supervisor of Certification, Maryland State Department of Education, State Office Building, Baltimore, Maryland, 21201. Contact: Mr. Lewin A. Wheat, Asst. Dir., ESEA Title III, (same address) Dr. Theothil K. Muellen, Asst. State Supt., Division of Instruction, Wyndhurst Division, 600 Wyndhurst Avenue, Baltimore, Maryland, 21210.

Massachusetts

Massachusetts does not have specific certification in aviation. A teacher certified in physics or general science with training and experience in aviation might teach such a subject. Contact: Mr. John P. McGrail, Director of Teacher Certification, Massachusetts Department of Education, 182 Fremont Street, Boston, Massachusetts, 02111.

Michigan

A teacher in Michigan is required to satisfy minor credit requirements in a subject field in order to teach aviation. This requirement entails some 15 semester hours, available from Western Michigan University. Mr. Eugene Richardson, Consultant Teacher Education and Certification, Department of Education, Bureau of Higher Education, P.O. Box 420, Lansing, Michigan, 48902. Contact: Dr. Leon Waskin, Deputy Associate Superintendent, Bureau of Educational Services, Michigan Department of Education, Lansing, Michigan, 48902.

Minnesota

Minnesota does not have teacher certification specifically for aviation at this time. Such courses would be taught by qualified science teachers, perhaps in earth science or physical science. Contact: Mr. E. Raymond Peterson, Assistant Commissioner, Minnesota Department of Education, Centennial Office Building, St. Paul, Minnesota, 55101.

Mississippi

Mississippi has no provision for certifying teachers in area of aviation education. Contact: Dr. Russell J. Crider, Supervisor of Teacher Education, Certification and Placement, Mississippi Department of Education, Jackson, Mississippi, 39205.

Missouri

Missouri does not have established requirements for teacher certification in the subject field of aviation at secondary level. Contact: Mr. Homer Bolen, Director of Supervision, Missouri Department of Education, Box 480, Jefferson City, Missouri, 65101.

Montana

Montana has no endorsement requirements in the subject field of aviation. It is felt that until more colleges offer teaching majors or minors in aviation education, an endorsement ought not to be required. Certified teachers with aviation experience teach such courses. Contact: Mr. T. Duane Jackson, Supervisor of Aviation Education, Department of Public Instruction, Helena, Montana, 59601.

Nebraska

There are no specific references to the subject field of aviation. Contact: Mr. Royal Henline, Curriculum Development Director, Nebraska Department of Education, Lincoln, Nebraska, 68509.

Nevada

Being a certified science teacher is the main criteria for teaching aviation and related subjects in Nevada at this time. Contact: Mr. Jack O'Leary, Science Consultant, Nevada Department of Education, Heroes Memorial Bldg., Carson City, Nevada, 89701.

New Hampshire

"The 'Major Teaching Field' is the field in which the teacher teaches more than 50% of that teacher's school day. Since, from your description of the proposed course, it would appear to be a combination of social studies and science, it would almost seem to be best to have the assignment a team-teaching venture. For the science portion of the assignment a general science-earth science training involving the physics embodied in aerodynamics and the earth science covered in meteorology and map-reading, land-formations could suffice. The person should have 12 credits of aviation-related science. A person certified in social studies could carry that portion of the team. I have gone into this detail because aviation education, as you note, is not specifically covered. Each teacher case would have to be judged individually. And, should a school system wish to try a novel, experimental approach in staffing for this course, a 'Permit' class exists for the uncertifiable." Contact: Mr. Howard I. Wagner, Consultant, Science Education, Department of Education, State House Annex, Concord, New Hampshire, 03301.

New Jersey

There are no teacher certification requirements for the subject field of aviation. The New Jersey Secondary School Administrators Association has a standing committee on air space education. Contact: Dr. Allan Rosebrock, Director-Teacher Education and Certification, State Department of Education, 225 W. State Street, Trenton, New Jersey, 08625. Mr. William H. Warner, Director-Division of Curriculum and Instruction. (same address)

New Mexico

Certification in aviation education is not resolved in New Mexico. Individual school's programs are approved on merits of each case. Their policy is liberal; they have not refused approval on the two courses submitted during the last year. General requirements call for 18 semester hours in subject area, and 5 semester hours in the specific course. They are interested in having something concrete, yet realistic, adopted. Contact: Mr. Fred McDonald, Director-Elementary and Secondary Education, Department of Education, Capitol Building, Santa Fe, New Mexico, 87501.

New York

The Bureau of Trade and Industrial Education is responsible for 3-year trade programs on the high school level. No short-term survey type courses in aviation are operated by the Bureau. Unable to get information on academic requirements. Contact: Mr. Edward A. Shattuck, Associate in Industrial Education, Bureau of Trade and Technical Education, State Education Department, Albany, New York, 12224.

North Carolina

North Carolina does not issue any teacher certificates in the field of aviation, however, mention was made that study of aviation would fall under the science curriculum. Contact: Mr. Paul Taylor, Supervisor of Science Education, Department of Public Instruction, Raleigh, North Carolina, 27601.

North Dakota

No provision for certification in aviation education exists in North Dakota. The state superintendent has issued a bulletin entitled "Aerospace Education" prepared by the Division of Instruction which specifically supports the place of aerospace curriculum instruction in the elementary and secondary grade levels. Mr. M. F. Peterson, Superintendent, and Mr. Richard K. Klein, Assistant Superintendent, Department of Public Instruction, Bismarck, North Dakota, 58501.

*Ohio

A teacher must have, in addition to general and professional requirements for secondary teachers, at least 15 hours of study in aviation-related subjects. Contact: Mr. Doyle K. Shumaker, Director-Division of Elementary and Secondary Education, Ohio Department of Education, Room 606, Ohio Depts. Bldg., 65 South Front Street, Columbus, Ohio, 43215.

*Oklahoma

"The preparation of the teacher shall include a minimum of 18 semester hours in science and/or mathematics which includes at least 8 semester hours in physics with a college course in aeronautics. A private pilot certificate or a basic ground instructor certificate issued by Federal Aviation Administration may be substituted for the 8 semester hours of physics and college course in aeronautics."

Mr. Raymond Chapman, Assistant Director, Teacher Education and Certification, Oklahoma Department of Education, Oklahoma City, Oklahoma, 73105. Contact: Mr. J. D. Giddens, Director, Division of Instruction. (same address)

*Oregon

There is no teacher certification, as such, but they approve course in Oregon schools if:

1. An approvable course outline is submitted.
2. The teacher's background in aviation is acceptable.
3. The course meets an apparent need of the students of the school and of the community.

The Oregon Board of Education, Division of Community Colleges and Career Education, has issued a study entitled "The Feasibility of Oregon Community Colleges and Secondary Schools Offering Civil Aviation Occupational Education" which analyzes and endorses a curriculum offering in aviation at the elementary, secondary and community college levels available in limited supply. Contact: Mr. Robert L. Houck, Acting Director-Instructional Technology, Oregon Board of Education, 942 Lancaster Drive, N.E., Salem, Oregon, 97310.

Pennsylvania

No specific requirements. Recommend teacher to be fully certified in a related field and have more than a passing interest in aviation. Plan to require within two years an FAA ground instructor rating and as soon as feasible six college credits in aviation education. This will depend on colleges setting up courses in this instruction area. We also recommend the secondary teacher hold a private pilot's certificate but do not require it at this time. Contact: Dr. John E. Kosoloski, Director, Bureau of General and Academic Education, Pennsylvania Department of Education, Box 911, Harrisburg, Pennsylvania, 17126.

Rhode Island

There are no certification standards dealing specifically with aviation education. Contact: Mr. Thomas Sandham, Associate Commissioner for Vocational Education, and/or Mr. Kenneth P. Mellor, Chief Certification Officer, Department of Education, Roger Williams Building, 25 Hayes Street, Providence, Rhode Island, 02901.

South Carolina

South Carolina does not have specific certification for teachers of aviation or aviation courses. Mr. George W. Hopkins, Director, Teacher Education and Certification, Department of Education, Columbia, South Carolina, 29201.

South Dakota

"South Dakota does not provide certification for secondary teachers in this general area. In the few cases in the state when such courses have been taught, the teaching was done by secondary trained teachers in the fields of the sciences." Mr. Lloyd Uecker, Director, Teacher Education and Certification, Department of Public Instruction, Pierre, South Dakota, 57501. Contact: Mr. Boyd Wright, State Approval Agency, Veterans Training. (same address)

*Tennessee

"Aeronautics: The applicant shall offer a minimum of 18 quarter hours credit in aeronautics. The hours shall include civil air regulations, navigation, meteorology, theory of flight, engines, communications, aircraft familiarization, social, geographic, and economic implications of aviation, and flight instruction." Mr. A. B. Cooper, Director, Teacher Training and Certification, State Department of Education, Nashville, Tennessee, 37219.

Texas

The Texas Education Agency is presently working in this area of development. An Aerospace Education Council has been formed to advise the agency. Contact: Mr. C.S. Story, Program Director for Science and Math, Division of Program Development, Texas Education Agency, 201 E. 11th Street, Austin, Texas 78711.

Utah

Utah accredits teachers by two types of teaching certificates, basic professional and professional. These are based on approved teaching majors and minors. Utah State Board of Education, Division of Teacher Personnel, 1300 University Club Building, Salt Lake City, Utah, 84111. Contact: Miss Afton Forsgren, Coordinator of Secondary Education, Utah State Board of Education, Division of Elementary and Secondary Education, 1400 University Club Building, 136 East South Temple, Salt Lake City, Utah, 84111.

Vermont

No specific requirements at this time. Instructors of courses presently being offered are certified in science and have received flight training. Cola D. Watson, State Director, Vocational-Technical Education, State Office Building, Montpelier, Vermont, 05602.

Virginia

Virginia does not include an endorsement for the teaching of aviation education. Units in aviation education are often taught in connection with a regular science course. Mr. A. Gordon Brooks, Director, Division of Teacher Education, State Board of Education, Richmond, Virginia, 23201.

Washington

Washington does not have specific certification for teachers of aviation or aviation courses. Dr. Wendell C. Allen, Assistant Superintendent, Teacher Education and Certification, Department of Public Instruction, P. O. Box 527, Olympia, Washington, 98501.

West Virginia

No provisions are made for endorsement in subject field of aviation. Teacher requirements would depend upon whether course was taught as a science or a social study. Mr. Thomas J. McGinnis, Jr., Certification, West Virginia Department of Education, Charleston, West Virginia, 25301.

Wisconsin

"At the present time there is no special certification for teachers in the subject field of aviation education at the secondary level. There are a few courses in aviation being taught in Wisconsin by science teachers. This does not, however, imply that aviation education is considered to be mostly correlated with the teaching of science in spite of the fact that science topics may be included." The State Superintendent has instructed the Wisconsin Aerospace Education Committee to make evaluation and recommendations in school curricula. Mr. Kenneth W. Dowling, Supervisor of Science, Division of Instructional Services, Department of Public Instruction, 126 Langdon Street, Madison, Wisconsin, 53702.

*Wyoming

State Board approval for the addition of aviation education as an accredited elective in the public schools was obtained in 1966. Minimum requirements for teacher certification (in aviation): (1) a valid Wyoming teaching certificate endorsed

Wyoming . . . cont'd

for science and/or mathematics with at least 3 semester hours of credit in aviation education; or (2) a valid Wyoming teaching certificate and private pilot license in lieu of the science-math requirements. Contact: Mr. Vincent G. Sindt, Consultant, Science & Mathematics, Wyoming Department of Education, Cheyenne, Wyoming, 82001.